

## ABSTRACT OF THE DISCLOSURE

5 A communications system, having a combination Reed-Solomon encoder and a Turbo-Code encoder Data frame configuration which may be changed to accommodate embedded submarkers of known value are embedded in with the data order to aid synchronization in the receiver system, by providing strings of known symbols. The string of known symbols may be the same as the symbols within a training header that appears at the beginning of a data frame. Frame parameters may be tailored to individual users and may be controlled by information pertaining to receivers, such as bit error rate, of the receiver. Additional headers may be interspersed within the data in order to assist in receiver synchronization. Frames of data may be acquired quickly by a receiver by having a string of symbols representing the phase offset between successive header symbols in the header training sequence in order to determine the carrier offset. Phase lock to a signal may achieved after determining carrier offset in receivers by correlating successive symbols in successive headers. It is emphasized that this abstract is provided to comply with the rules requiring an abstract which will allow a searcher or other reader to quickly ascertain the subject matter of the technical disclosure. It is submitted with the understanding that it will not be used to interpret or limit the scope or the meaning of the claims.

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